

Advancement Handbook for Mineman

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PREFACE

The purpose of the Advancement Handbook is to help you focus your preparation for Navywide advancement-in-rating examinations. The bibliographies (BIBs) together with this handbook form a comprehensive examination study package. Since this handbook provides skill and knowledge components for each paygrade of the Mineman (MN) rating, it helps you concentrate your study on those areas that may be tested. This feature will help you get the most out of your study time.

Each page in Parts 1 through 4 of this Advancement Handbook presents general skill areas, specific skill areas, the knowledge factors associated with each skill area, the pertinent references that address each skill, and the subject areas that may be covered on the examination. The skill statements describe the skills you are expected to perform for each paygrade. The skill statements are cumulative; that is, you are responsible for the skills for the paygrade you are competing for, your present paygrade, and all paygrades below.

Although this handbook is very comprehensive, it cannot cover all the tasks performed in the rating. As a result, the advancement examinations may contain questions more detailed than described in the “*Exam Expectations*” section of the skill areas.

Remember that advancement competition is keen, so your keys to advancement include not only comprehensive advancement examination study but also sustained superior performance.

Prepared by

Naval Education and Training Professional
Development and Technology Center

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Part 1

Advancement Handbook for MN3

Advancement Handbook for MN3

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| General MN <i>Skill Area</i> | Mine Assembly and Disassembly |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Remove and install arming devices |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to install and remove arming devices, as described in the appropriate technical manual |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Destructors, Mk 36 and Mk 40 and Mines, Mk 62 and 63, Description, Assembly, and Test</i>, NAVSEA SW551-A2-MMI-010 • <i>Mine, Underwater, Mark 65 Mods 0 and 1, Description and Procedures Intermediate Maintenance Activity</i>, NASEA SW551-A3-MMI-010 • <i>Mines, Underwater: Actuation; Description, Assembly, and Tests</i>, NAVSEA SW550-AE-MMI-040 • <i>Mines, Underwater: Laying, Description, Assembly, and Disassembly</i>, NAVSEA SW550-AE-MMI-050 • <i>Mines, Underwater: Handling, Shop, Mechanical Sweep, and Hunting, Description and Assembly</i>, NAVSEA SW550-AE-MMI-060 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the different types of service and ET arming devices; how various arming devices arm and operate; and the procedures for installing, removing and safely handling arming devices. |

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| General MN <i>Skill Area</i> | Mine Assembly and Disassembly |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Remove and install safe and arming group |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to install and remove the safe and arming group, as described in the appropriate technical manual |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Mine, Underwater, Mark 65 Mods 0 and 1, Description and Procedures Intermediate Maintenance Activity</i>, NAVSEA SW551-A3-MMI-010 • <i>Mines, Underwater: Laying, Description, Assembly, and Disassembly</i>, NAVSEA SW550-AE-MMI-050 • <i>Mines, Underwater: Handling, Shop, Mechanical Sweep, and Hunting, Description and Assembly</i>, NAVSEA SW550-AE-MMI-060 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on installing, removing, and safely handling the safe and arming group. |

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| General MN <i>Skill Area</i> | Mine Assembly and Disassembly |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Remove and install explosive initiators, fittings, and boosters |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Install and remove the explosive initiator, as described in the appropriate technical manual • Install and remove the explosive fitting, as described in the appropriate technical manual. • Install and remove the booster, as described in the appropriate technical manual |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Destructors, Mk 36 and Mk 40 and Mines, Mk 62 and 63, Description, Assembly, and Test</i>, NAVSEA SW551-A2-MMI-010 • <i>Mine, Underwater, Mark 65 Mods 0 and 1, Description and Procedures Intermediate Maintenance Activity</i>, NAVSEA SW551-A3-MMI-010 • <i>Mines, Underwater: Actuation; Description, Assembly, and Tests</i>, NAVSEA SW550-AE-MMI-040 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the different types of explosive initiators, fittings and boosters; and the procedures for installing, removing, and safely handling them. |

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| General MN <i>Skill Area</i> | Mine Assembly and Disassembly |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Assemble, program, and install Target Detecting Devices (TDDs) |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Assemble and program TDDs • Install and remove TDDs, as described in the appropriate technical manual |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Destructors, Mk 36 and Mk 40 and Mines, Mk 62 and 63, Description, Assembly, and Test</i>, NAVSEA SW551-A2-MMI-010 • <i>Mine, Underwater, Mark 65 Mods 0 and 1, Description and Procedures Intermediate Maintenance Activity</i>, NAVSEA SW551-A3-MMI-010 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the different types of TDD subassemblies; how to test and program TDDs; and the procedures for installing, removing, and safely handling them. |

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| General MN <i>Skill Area</i> | Mine Assembly and Disassembly |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Torque mine watertight openings, components, and accessories |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to torque mine watertight openings, components, and accessories, as described in appropriate technical manual |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Destructors, Mk 36 and Mk 40 and Mines, Mk 62 and 63, Description, Assembly, and Test</i>, NAVSEA SW551-A2-MMI-010 • <i>Mine, Underwater, Mark 65 Mods 0 and 1, Description and Procedures Intermediate Maintenance Activity</i>, NAVSEA SW551-A3-MMI-010 • <i>Mines, Underwater: Actuation; Description, Assembly, and Tests</i>, NAVSEA SW550-AE-MMI-040 • <i>Mines, Underwater: Laying: Description, Assembly, and Disassembly</i>, NAVSEA SW550-AE-MMI-050 • <i>Mines, Underwater: Handling, Shop, Mechanical Sweep, and Hunting, Description and Assembly</i>, NAVSEA SW550-AE-MMI-060 • <i>Versatile Exercise Mine System (VEMS), Description and Maintenance</i>, NAVSEA SW550-AE-MMI-070 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions about torquing watertight openings and components. |

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| General MN <i>Skill Area</i> | Mine Assembly and Disassembly |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Remove and install mine tails, fins, and flight gear |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Install and remove the mine tail, as described in the appropriate technical manual • Install and remove mine fins, as described in the appropriate technical manual • Install and remove mine flight gear, as described in the appropriate technical manual |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Destructors, Mk 36 and Mk 40 and Mines, Mk 62 and 63, Description, Assembly, and Test</i>, NAVSEA SW551-A2-MMI-010 • <i>Mine, Underwater, Mark 65 Mods 0 and 1, Description and Procedures Intermediate Maintenance Activity</i>, NAVSEA SW551-A3-MMI-010 • <i>Mines, Underwater: Laying; Description, Assembly, and Disassembly</i>, NAVSEA SW550-AE-MMI-010 • <i>Mines, Underwater: Actuation; Description, Assembly, and Tests</i>, NAVSEA SW550-AE-MMI-040 • <i>Mines, Underwater: Laying: Description, Assembly, and Disassembly</i>, NAVSEA SW550-AE-MMI-050 <p><i>Mines, Underwater: Handling, Shop, Mechanical Sweep, and Hunting, Description and Assembly</i>, NAVSEA SW550-AE-MMI-060</p> |

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| <p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p> | <p>You can expect questions on the different types of flight gear for quickstrike mines and ET mines; and the procedures for installing and removing the various types of flight gear.</p> |
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| General MN <i>Skill Area</i> | Mine Assembly and Disassembly |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Remove, disassemble, assemble and install instrument racks |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Install and remove the instrument rack, as described in the appropriate technical manual • Assemble and disassemble the instrument rack, as described in the appropriate technical manual |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Mines, Underwater: Actuation: Description, Assembly, and Disassembly</i>, NAVSEA SW550-AE-MMI-040 • <i>Mines, Underwater: Exercise and Training, Class-B Test and Refurbishment</i>, NAVSEA SW550-AE-MMI-020 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on installing, removing, assembling, and disassembling instrument racks in actuation mines. |

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| General MN <i>Skill Area</i> | Mine Assembly and Disassembly |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Assemble, disassemble, install, and remove float and shield subassemblies |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Assemble and disassemble the drill shield, as described in the appropriate technical manual • Install and remove the drill shield, as described in the appropriate technical manual |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Mines, Underwater: Actuation: Description, Assembly, and Disassembly</i>, NAVSEA SW550-AE-MMI-040 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions about the assembly, disassembly, installation, and removal procedures of the drill shield on an actuation mine. |

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| General MN <i>Skill Area</i> | Mine Assembly and Disassembly |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Remove and install interconnecting cables and cable assemblies |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Install and remove interconnecting cables, as described in the appropriate technical manual • Assemble and disassemble cables, as described in the appropriate technical manual |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Destructors, Mk 36 and Mk 40 and Mines, Mk 62 and 63, Description, Assembly, and Test</i>, NAVSEA SW551-A2-MMI-010 • <i>Mine, Underwater, Mark 65 Mods 0 and 1, Description and Procedures intermediate Maintenance Activity</i>, NAVSEA SW551-A3-MMI-010 • <i>Mines, Underwater: Laying; Description, Assembly, and Disassembly</i>, NAVSEA SW550-AE-MMI-010 • <i>Mines, Underwater: Actuation; Description, Assembly, and Tests</i>, NAVSEA SW550-AE-MMI-040 • <i>Mines, Underwater: Laying; Description, Assembly, and Disassembly</i>, NAVSEA SW550-AE-MMI-050 • <i>Mines, Underwater: Handling, Shop, Mechanical Sweep, and Hunting, Description and Assembly</i>, NAVSEA SW550-AE-MMI-060 <p><i>Versatile Exercise Mine System (VEMS), Description and Maintenance</i>, NAVSEA SW550-AE-MMI-070</p> |

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| <p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p> | <p>You can expect questions on installing and removing various interconnecting cables and cable assemblies.</p> |
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| General MN <i>Skill Area</i> | Mine Assembly and Disassembly |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Assemble and disassemble ballast sections |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to assemble and disassemble the ballast section, as described in the appropriate technical manual |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Versatile Exercise Mine System (VEMS), Description and Maintenance</i>, NAVSEA SW550-AE-MMI-070 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on assembling and disassembling ballast sections. |

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| General MN <i>Skill Area</i> | Mine Assembly and Disassembly |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Assemble and disassemble buoy sections |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> How to assemble and disassemble buoy sections, as described in the appropriate technical manual |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> <i>Versatile Exercise Mine System (VEMS), Description and Maintenance</i>, NAVSEA SW550-AE-MMI-070 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on assembling and disassembling buoy sections. |

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| General MN <i>Skill Area</i> | Ordnance and Ordnance Component Maintenance and Handling |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Thaw, remove, replace, test, inspect, and charge batteries for underwater mines (UMN) and the Mine Neutralization System (MNS) |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Replace system batteries (UMN, MNS, etc.) • Test, inspect, and charge batteries (UMN, MNS, etc.) |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Destructor, Explosive, Mk 57 Mod 0, Operation and Maintenance Instructions</i>, NAVSEA SW570-EO-MMO-070 • <i>Destructors, Mk 36 and Mk 40 and Mines, Mk 62 and 63, Description, Assembly, and Test</i>, NAVSEA SW551-A2-MMI-010 • <i>Mine Components A through C, Description and Class-B Criteria</i>, NAVSEA SW550-AA-MMI-010 • <i>Mine Neutralization System, Cable Cutter Mk 26 Mod 0, Operation and Maintenance Instructions</i>, NAVSEA SW570-EO-MMO-080 • <i>Mine, Underwater, Mark 65 Mods 0 and 1, Description and Procedures</i>, NAVSEA SW551-A3-MMI-010 • <i>Mines, Underwater: Actuation; Description, Assembly, and Tests</i>, NAVSEA SW550-AE-MMI-040 • <i>Mines, Underwater: Exercise and Training, Description and Class-B Criteria</i>, NAVSEA SW550-AE-MMI-010 • <i>Mines, Underwater: Exercise and Training, Class-B Test and Refurbishment</i>, NAVSEA SW550-AE-MMI-020 |

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| | <ul style="list-style-type: none"> • <i>Mines, Underwater: Laying; Description, Assembly, and Disassembly</i>, NAVSEA SW550-AE-MMI-010 • <i>Versatile Exercise Mine System (VEMS), Description and Maintenance</i>, NAVSEA SW550-AE-MMI-070 |
| <p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p> | <p>You can expect questions on thawing, testing, removing, and installing batteries in service and ET mines and in the Mine Neutralization System.</p> |

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| General MN <i>Skill Area</i> | Ordnance and Ordnance Component Maintenance and Handling |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Conduct Class (B) and Class (C) tests |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Conduct stray voltage and continuity checks on mines and mine components • Conduct tests on electro-explosive devices (EED) • Perform class (B) tests on mines (UMN) and the Mine Neutralization System (MNS) • Perform class (C) tests on mines (UMN) and the Mine Neutralization System (MNS) |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Destructor, Explosive, Mk 57 Mod 0, Operation and Maintenance Instructions</i>, NAVSEA SW570-EO-MMO-070 • <i>Destructors, Mk 36 and Mk 40 and Mines, Mk 62 and 63, Description, Assembly, and Test</i>, NAVSEA SW551-A2-MMI-010 • <i>Mine Components A through C, Description and Class-B Criteria</i>, NAVSEA SW550-AA-MMI-010 • <i>Mine Components D through F, Description and Class-B Criteria</i>, NAVSEA SW550-AA-MMI-020 • <i>Mine Components G through W, Description and Class-B Criteria</i>, NAVSEA SW550-AA-MMI-030 • <i>Mine Neutralization System, AN/SLQ-48(V), Operation and Maintenance Instructions</i>, NAVSEA SW570-AA-OMI-010 • <i>Mine Neutralization System, Cable Cutter Mk 26 Mod 0, Operation and Maintenance Instructions</i>, NAVSEA SW570-EO-MMO- |

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| | <p>080</p> <ul style="list-style-type: none"> • <i>Mine, Underwater, Mark 65 Mods 0 and 1, Description and Procedures</i>, NAVSEA SW551-A3-MMI-010 • <i>Mines, Underwater: Actuation; Description, Assembly, and Tests</i>, NAVSEA SW550-AE-MMI-040 • <i>Mines, Underwater: Exercise and Training, Description and Class-B Criteria</i>, NAVSEA SW550-AE-MMI-010 • <i>Mines, Underwater: Exercise and Training, Class-B Test and Refurbishment</i>, NAVSEA SW550-AE-MMI-020 • <i>Mines, Underwater: Laying; Description, Assembly, and Disassembly</i>, NAVSEA SW550-AE-MMI-010 • <i>Versatile Exercise Mine System (VEMS), Description and Maintenance</i>, NAVSEA SW550-AE-MMI-070 |
| <p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p> | <p>You can expect questions on testing mines and mine components in service and ET mines. You can also expect questions on testing the Mine Neutralization System.</p> |

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| General MN <i>Skill Area</i> | Ordnance and Ordnance Component Maintenance and Handling |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Conduct cycle maintenance on mines and mine components |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Perform cycle maintenance on mines and mine components • Perform engineering change instructions (ECI) • Change O-rings |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Destructor, Explosive, Mk 57 Mod 0, Operation and Maintenance</i>, NAVSEA SW570-EO-MMO-070 • <i>Destructors, Mk 36 and Mk 40 and Mines, Mk 62 and 63, Description, Assembly, and Test</i>, NAVSEA SW551-A2-MMI-010 • <i>Mine Components A Through C, Description and Class-B Criteria</i>, NAVSEA SW550-AA-MMI-010 • <i>Mine Components D Through F, Description and Class-B Criteria</i>, NAVSEA SW550-AA-MMI-020 • <i>Mine Components G Through W, Description and Class-B Criteria</i>, NAVSEA SW550-AA-MMI-030 • <i>Mine Neutralization System, Cable Cutter Mk 26 Mod 0, Operation and Maintenance Instructions</i>, NAVSEA SW570-EO-MMO-080 • <i>Mine, Underwater, Mark 65 Mods 0 and 1, Description and Procedures</i>, NAVSEA SW551-A3-MMI-010 |

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| | <ul style="list-style-type: none"> • <i>Mines, Underwater: Actuation; Description, Assembly, and Tests</i>, NAVSEA SW550-AE-MMI-040 • <i>Mines, Underwater: Exercise and Training, Description and Class-B Criteria</i>, NAVSEA SW550-AE-MMI-010 • <i>Mines, Underwater: Exercise and Training, Class-B Test and Refurbishment</i>, NAVSEA SW550-AE-MMI-020 • <i>Mines, Underwater: Laying; Description, Assembly, and Disassembly</i>, NAVSEA SW550-AE-MMI-010 • <i>Versatile Exercise Mine System (VEMS), Description and Maintenance</i>, NAVSEA SW550-AE-MMI-070 |
| <p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p> | <p>You can expect questions on maintaining service and ET mines.</p> |

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| General MN <i>Skill Area</i> | Ordnance and Ordnance Component Maintenance and Handling |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Refurbish ordnance and components (sanding, oiling, etc.) |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Inspect ordnance and components • Perform mine case renovation • Operate mine case renovation systems • Treat ordnance and components (sanding, painting, oiling, etc.) • Refurbish floats and shields • Weld spoiler to inert mines • Drill pinger and fairing holes in inert mines |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Mine Components A Through C, Description and Class-B Criteria</i>, NAVSEA SW550-AA-MMI-010 • <i>Mine Components D Through F, Description and Class-B Criteria</i>, NAVSEA SW550-AA-MMI-020 • <i>Mine Components G Through W, Description and Class-B Criteria</i>, NAVSEA SW550-AA-MMI-030 • <i>Mines, Underwater: Exercise and Training, Description and Class-B Criteria</i>, NAVSEA SW550-AE-MMI-010 • <i>Mines, Underwater: Exercise and Training, Class-B Test and Refurbishment</i>, NAVSEA SW550-AE-MMI-020 • <i>Versatile Exercise Mine System (VEMS), Description and Maintenance</i>, NAVSEA SW550-AE-MMI-070 |

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| <p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p> | <p>You can expect questions on refurbishing service and ET mines. This includes inspecting, cleaning, sanding, sandblasting, painting, oiling, etc. of ordnance and components.</p> |
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| General MN <i>Skill Area</i> | Ordnance and Ordnance Component Maintenance and Handling |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Conduct ordnance handling operations |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • On-load and off-load ammunition • Stow ammunition • Inspect, configure, and service ordnance handling equipment • Operate ordnance handling equipment |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Ammunition Afloat</i>, NAVSEA OP4 • <i>Ammunition and Explosives Ashore, Safety Regulations for Handling, Storing, Production, Renovation and Shipping</i>, NAVSEA OP5 • <i>Handling, Packaging, Storing, and Transportation of Underwater Mines and Destructors for Shore-Based/Shipboard Operations</i>, NAVSEA SW023-AB-WHS-010 • <i>Motor Vehicle Drivers Handbook, Ammunition, Explosives and Related Hazardous Materials</i>, NAVSEA OP 2239 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on handling, storing, and shipping explosives. This includes the on-load and off-load of explosives, what type of handling equipment to use, and the safe operation of material handling equipment. |

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| General MN <i>Skill Area</i> | Mine Warfare Operations |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Place identifying marks (stencil, tag, label, etc.) on mines, mine equipment, and components |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to label ordnance, equipment, and components as directed by associated technical manuals. |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Destructors, Mk 36 and Mk 40 and Mines, Mk 62 and 63, Description, Assembly, and Test</i>, NAVSEA SW551-A2-MMI-010 • <i>Mine, Underwater, Mark 65 Mods 0 and 1, Description and Procedures</i>, NAVSEA SW551-A3-MMI-010 • <i>Mine Components A through C, Description and Class-B Criteria</i>, NAVSEA SW550-AA-MMI-010 • <i>Mines, Underwater: Actuation; Description, Assembly, and Tests</i>, NAVSEA SW550-AE-MMI-040 • <i>Mines, Underwater: Exercise and Training, Description and Class-B Criteria</i>, NAVSEA SW550-AE-MMI-010 • <i>Mines, Underwater: Exercise and Training, Class-B Test and Refurbishment</i>, NAVSEA SW550-AE-MMI-020 • <i>Mines, Underwater: Laying; Description, Assembly, and Disassembly</i>, NAVSEA SW550-AE-MMI-010 • <i>Versatile Exercise Mine System (VEMS), Description and Maintenance</i>, NAVSEA SW550-AE-MMI-070 |

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| <p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p> | <p>You can expect questions on labeling ordnance, ordnance equipment, and components.</p> |
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| General MN <i>Skill Area</i> | Mine Warfare Operations |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Make final operational settings on assembled mines |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to make operational settings on assembled mines, as described in appropriate technical manuals |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Destructors, Mk 36 and Mk 40 and Mines, Mk 62 and 63, Description, Assembly, and Test</i>, NAVSEA SW551-A2-MMI-010 • <i>Mine, Underwater, Mark 65 Mods 0 and 1, Description and Procedures</i>, NAVSEA SW551-A3-MMI-010 • <i>Mines, Underwater: Actuation; Description, Assembly, and Tests</i>, NAVSEA SW550-AE-MMI-040 • <i>Versatile Exercise Mine System (VEMS), Description and Maintenance</i>, NAVSEA SW550-AE-MMI-070 • <i>Versatile Exercise Mine System (VEMS), Rigging, Deployment, and Recovery</i>, NAVSEA SW570-FO-MMO-050 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on making operational settings on mines. |

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| General MN <i>Skill Area</i> | Technical Administration |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Prepare military standard (MILSTD) tags |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to complete military standard (MILSTD) tags |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Naval Ordnance Quality Assurance Procedures for Fleet Activities</i>, NAVSEA QAP 100 • <i>Quality Assurance (QA) Procedures</i> COMOMAG/MOMAGINST 4855.1 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on completing MILSTD tags. |

Advancement Handbook for MN3

| General MN <i>Skill Area</i> | Technical Administration |
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| <i>A skill</i> you are expected to perform from the General Skill Area above: | Fill out and submit mine Master Record Sheets |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to complete mine master record sheets |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Underwater Mine Maintenance System</i>, NAVSEA SW550-FO-PMS-010 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on which Master Record Sheet to use for each type of mine. Also, on completing and submitting Master Record Sheets. |

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| General MN <i>Skill Area</i> | Technical Administration |
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| <i>A skill</i> you are expected to perform from the General Skill Area above: | Fill out and submit Mine-System Data Reports |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to complete Mine-System Data Reports |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Underwater Mine Maintenance System</i>, NAVSEA SW550-FO-PMS-010 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on completing and submitting Mine-System Data Reports |

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| General MN <i>Skill Area</i> | Technical Administration |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Conduct ammunition inventories |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to inventory ammunition and associated components |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Ammunition Afloat</i>, NAVSEA OP 4 • <i>Ammunition and Explosives Ashore Safety Regulations for Handling, Storing, Production, Renovation, and Shipping</i>, NAVSEA OP 5 Vol. 1 • <i>Naval Supply Procedures, Volume I&II</i>, NAVSUP P-485 • <i>Supply Procedures</i>, COMOMAGINST 4000.1 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on how to conduct ammunition inventories. |

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| General MN <i>Skill Area</i> | Magazine Operations and Maintenance |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Perform magazine, pyrotechnic locker, and ready service locker inspections. |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Inspect magazine areas • Inspect pyrotechnic lockers • Inspect ready service lockers • Inspect magazine, pyrotechnic locker, and ready service locker stowage • Clean and inspect magazine cooling and ventilation systems |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Ammunition Afloat</i>, NAVSEA OP 4 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect general questions on magazine areas, pyrotechnic lockers, and ready service lockers. |

Advancement Handbook for MN3

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| General MN <i>Skill Area</i> | Magazine Operations and Maintenance |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Inspect, clean, and inventory security locks |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Inventory security locks and components • Clean, inspect, and lubricate security locks • Change security locks and components |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Ammunition Afloat</i>, NAVSEA OP 4 • Applicable Maintenance Requirement Card |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the maintenance cycles for security locks and how to maintain the locks. |

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| General MN <i>Skill Area</i> | Magazine Operations/Maintenance |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Record magazine temperatures |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to record magazine temperatures |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Ammunition Afloat</i>, NAVSEA OP 4 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on how to take and record magazine temperatures |

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| General MN <i>Skill Area</i> | Magazine Fire Suppression Systems Operation and Maintenance |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Inspect and operate magazine fire suppression systems |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Test dry magazine sprinkler systems • Flush sprinkler systems • Test sprinkler system alarms • Inspect sprinkler system pressure • Install, remove, and stow sprinkler system test castings • Perform magazine sprinkler system inspections |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Ammunition Afloat</i>, NAVSEA OP 4 • <i>Magazine Sprinkler Systems</i>, NAVSEA S9522-AA-HBK-010 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the purpose and functions of shipboard magazine sprinkler systems. Also, on the primary components of a magazine sprinkler system, including various control valves, gauges, and alarm systems. |

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| General MN <i>Skill Area</i> | Magazine Fire Suppression Systems Operation and Maintenance |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Perform preventive and corrective maintenance on magazine sprinkler systems |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Clean, inspect, and replace sprinkler heads • Clean and inspect sprinkler system sea water strainers • Clean and inspect sprinkler system piping • Clean, inspect, and replace sprinkler system valves • Test and replace transmission tubing • Test and replace circle seal check valves • Test and inspect vented check valves • Lubricate sprinkler system components • Repair magazine sprinkler systems and components |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Ammunition Afloat</i>, NAVSEA OP 4 • <i>Magazine Sprinkler Systems</i>, NAVSEA S9522-AA-HBK-010 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on inspecting, cleaning, and replacing magazine sprinkler system components. |

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| General MN <i>Skill Area</i> | Marlinespike Seamanship |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Make splices in lines |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to make splices in lines |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Mineman Volume 7</i>. NAVEDTRA 12454 • <i>Wire and Fiber Rope and Rigging</i>, NSTM S9086-UU-STM-010 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the different types of splices and how they are made. |

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| General MN <i>Skill Area</i> | Marlinespike Seamanship |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Tie and untie knots, bends and hitches |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Tie and untie knots • Tie and untie bends • Tie and untie hitches |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Mineman Volume 7</i>. NAVEDTRA 12454 • <i>Wire and Fiber Rope and Rigging</i>, NSTM S9086-UU-STM-010 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on how to tie/untie different types of knots, bends, and hitches. Also, when to use certain types of knots, bends, and hitches. |

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| General MN <i>Skill Area</i> | Marlinespike Seamanship |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Handle lines |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Coil down lines • Fake down lines • Flemish down lines • Install tattletale lines |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Mineman Volume 7</i>. NAVEDTRA 12454 • <i>Mooring and Towing</i>, NSTM S9086-TW-STM-010 • <i>Wire and Fiber Rope and Rigging</i>, NSTM S9086-UU-STM-010 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the care and handling of lines, and how to work out kinks and twists. Also on mooring lines and commands to line handlers. |

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| General MN <i>Skill Area</i> | Marlinespike Seamanship |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Inspect lines |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Inspect lines • Inspect lifelines |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Mineman Volume 7</i>. NAVEDTRA 12454 • <i>Mooring and Towing</i>, NSTM S9086-TW-STM-010 • <i>Wire and Fiber Rope and Rigging</i>, NSTM S9086-UU-STM-010 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on line characteristics and line inspection guidelines. |

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| General MN <i>Skill Area</i> | Marlinespike Seamanship |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Seize the bitter end of lines and wire ropes |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to seize the bitter end of lines and wire ropes |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Mineman Volume 7</i>. NAVEDTRA 12454 • <i>Mooring and Towing</i>, NSTM S9086-TW-STM-010 • <i>Wire and Fiber Rope and Rigging</i>, NSTM S9086-UU-STM-010 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the different types of seizings and when they should be used. |

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| General MN <i>Skill Area</i> | Marlinespike Seamanship |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Install wire rope clips |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to install wire rope clips |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Mineman Volume 7</i>. NAVEDTRA 12454 • <i>Mooring and Towing</i>, NSTM S9086-TW-STM-010 • <i>Wire and Fiber Rope and Rigging</i>, NSTM S9086-UU-STM-010 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the construction of wire rope and the proper way to install wire rope clips. |

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| General MN <i>Skill Area</i> | Deck Seamanship |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Rig and unrig camels and fenders |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Rig and unrig camels • Rig and unrig fenders |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Boats and Small Craft</i>, NSTM S9086-TX-STM-010 • <i>Mineman Volume 7</i>. NAVEDTRA 12454 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the different types of deck fittings and the rigging and unrigging of camels and fenders. |

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| General MN <i>Skill Area</i> | Deck Seamanship |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Rig, unrig, and use boatswain's chairs |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to rig, unrig, and use a boatswain's chair |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Boats and Small Craft</i>, NSTM S9086-TX-STM-010 • <i>Mineman Volume 7</i>. NAVEDTRA 12454 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on going aloft and working over the side in a boatswain's chair. |

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| General MN <i>Skill Area</i> | Deck Seamanship |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Rig and unrig gangways, brows and pilot's ladders |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Rig and unrig gangways and brows • Rig and unrig a pilot's ladder |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Boats and Small Craft</i>, NSTM S9086-TX-STM-010 • <i>Mineman Volume 7</i>. NAVEDTRA 12454 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on rigging and unrigging gangways, brows, and pilot's ladders. |

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| General MN <i>Skill Area</i> | Deck Seamanship |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Rig and unrig for underway replenishment |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Rig and unrig blocks • Rig and unrig bridge-to-bridge telephones and distance lines • Rig and unrig refueling stations • Rig and unrig daytime and nighttime markers • Rig and unrig light line transfers • Send UNREP signals |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Boats and Small Craft</i>, NSTM S9086-TX-STM-010 • <i>Mineman Volume 7</i>. NAVEDTRA 12454 • <i>Standard Organization and Regulations of the U.S. Navy</i>, OPNAVINST 3120.32 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on rigging and unrigging for underway replenishment. |

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| General MN <i>Skill Area</i> | Deck Seamanship |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Take soundings using a lead line |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Make a lead line • Take soundings using a lead line |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Boats and Small Craft</i>, NSTM S9086-TX-STM-010 • <i>Mineman Volume 7</i>. NAVEDTRA 12454 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on taking soundings using a hand held lead line. |

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| General MN <i>Skill Area</i> | Deck Seamanship |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Use and sew canvasses and leather |
| <i>Knowledge</i> you should have to perform this skill: | How to: ? Use and care for canvasses and leather ? Sew canvasses and leather |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | ? <i>Mineman Volume 7</i> . NAVEDTRA 12454 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the use and care of canvasses and leather. Also, on how to sew the different types of navy stitches. |

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| General MN <i>Skill Area</i> | Anchoring, Mooring, and Towing |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Inspect ground tackle |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to inspect ground tackle |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Mineman Volume 7</i>, NAVEDTRA 12454 • <i>Mooring and Towing</i>, NSTM S9086-TW-STM-010 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on how to identify anchors and their related appendages. |

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| General MN <i>Skill Area</i> | Anchoring, Mooring, and Towing |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Maintain ground tackle |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to maintain ground tackle |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Mineman Volume 7</i>, NAVEDTRA 12454 • <i>Mooring and Towing</i>, NSTM S9086-TW-STM-010 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on how to overhaul and keep ground tackle in a good state of repair. |

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| General MN <i>Skill Area</i> | Anchoring, Mooring, and Towing |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Use ground tackle for anchoring and for mooring to a buoy |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Prepare ground tackle for anchoring and mooring • Moor and unmoor with anchors • Moor and unmoor with piers • Moor and unmoor with buoys |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Mineman Volume 7</i>, NAVEDTRA 12454 • <i>Mooring and Towing</i>, NSTM S9086-TW-STM-010 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the standard methods for anchoring and mooring. |

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| General MN <i>Skill Area</i> | Boat Seamanship |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Interpret signal flags, signal lights, and signal flares |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Read signal flags • Read signal lights • Read signal flares |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>International Code of Signal</i>, DMA Pub. 102 • <i>Mineman Volume 7</i>, NAVEDTRA 12454 • <i>Navigation Rules, International-Inland</i>, COMDTINST M16672.2 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on how to interpret signal flags, lights, and flares. |

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| General MN <i>Skill Area</i> | Boat Seamanship |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Interpret and relay navigational sound signals |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Interpret navigational sound signals • Relay navigational sound signals |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>International Code of Signal</i>, DMA Pub. 102 • <i>Mineman Volume 6</i>, NAVEDTRA 12453 • <i>Navigation Rules, International-Inland</i>, COMDTINST M16672.2 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on how to interpret and relay navigational sound signals. |

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| General MN <i>Skill Area</i> | Boat Seamanship |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Load and off-load small boats |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Load small boats • Off-load small boats |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Boats and Small Craft</i>, NSTM S9086-TX-STM-010 • <i>Mineman Volume 7</i>, NAVEDTRA 12454 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on how to load and off-load small boats. |

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| General MN <i>Skill Area</i> | Boat Seamanship |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Maintain inflatable lifeboat static tension releases |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to clean, inspect, and replace lifeboat static tension releases |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Boats and Small Craft</i>, NSTM S9086-TX-STM-010 • <i>Mineman Volume 7</i>, NAVEDTRA 12454 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on how to clean, inspect, and replace lifeboat static tension releases. |

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| General MN <i>Skill Area</i> | Tactical Support Operations |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Maintain vertical and horizontal plots (DRT/DDRT, maneuvering board, and remote monitors) |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Plot and maintain DRT/DDRT and vertical plots • Construct formation diagrams and dispositions • Mark and interpret contact information • Display contact information |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Allied Maritime Tactical Instructions and Procedures</i>, Allied Tactical Publication, ATP 1, Vol. 1; Ch. 2, 3, 8, 9, 10 • <i>Allied Maritime Tactical Signal and Maneuvering Book</i>, Allied Tactical Publication, ATP 1, Vol. 2; Ch. 1. |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on plotting procedures and symbology for the DRT/DDRT and vertical plots, construction of formation diagrams, and force dispositions. |

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| General MN <i>Skill Area</i> | Tactical Support Operations |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Maintain summary and geographic plots (Minefields, Q Routes, Swept Lanes) |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Plot and maintain summary and geographic plots. • Display contact information. • Plot various environmental conditions • Plot mine fields. • Plot and update Q routes and swept channels. |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Allied Maritime Tactical Instructions and Procedures</i>, Allied Tactical Publication, ATP 1, Vol. 1; Ch. 5, 8, 9, 10 • <i>Mine Countermeasures and Planning Procedures (General Instructions)</i>, NWP 3-15.41 (Rev.B); Ch. 6 • <i>Mine Countermeasures Operations</i>, NWP 3-15.2, Ch. 9 • <i>Surface Mine Countermeasures Operations</i>, NWP 3-15.21, (Rev.B) Ch .1 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on maintaining summary and geographic plots, plotting environmental information, and plotting mine warfare information. |

Advancement Handbook for MN3

| General MN <i>Skill Area</i> | Tactical Support Operations |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Maintain CIC logs (Radio Telephone, Navigation, Contact, and Watch) |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Maintain CIC surface contact log • Maintain radio logs • Maintain watch logs • Maintain navigation and deck logs • Disseminate information written in CIC logs |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Preparing, Maintaining, and Submitting the Ship's Deck Log</i>, OPNAVINST 3100.7 • <i>Communication Instructions Radiotelephone Procedures</i>, Allied Communication Publication, ACP 125; Ch. 1 • <i>Ship Operational Data Forms</i>, OPNAV 3100-3360 series, (OPNAV Form 3100/2, 3100/3, 3100/5) |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on log keeping procedures and the information written in the different CIC logs, including abbreviations and prowords. |

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| General MN <i>Skill Area</i> | Tactical Support Operations |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Solve basic maneuvering board problems (Course, Speed, CPA, Stationing, Apparent/True/Desired Wind) |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Compute surface contact course and speed • Compute avoiding courses • Compute closest point of approach (CPA) • Determine true/relative/apparent wind • Determine course, speed, and time for stationing |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Maneuvering Board Manual</i>, U.S. Department of Defense, Pub 217 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on surface contact course, speed, and CPA, avoiding courses, wind problems, and stationing problems. |

Advancement Handbook for MN3

| General MN <i>Skill Area</i> | Tactical Support Operations |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Maintain special plots |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Plot search and rescue (SAR) data • Plot downed pilot data • Plot man overboard data |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Allied Maritime Tactical Instructions and Procedures</i>, Allied Tactical Publication, ATP 1, Vol. 1; Ch. 2, 12 • <i>National Search and Rescue Manual Vol. 1: National Search and Rescue System</i>, Joint Chiefs of Staff, JP 3-50; Ch 5, 6, 7, App D, E • <i>Search and Rescue</i>, Allied Tactical Publication, ATP-10; Ch. 6 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on Search and Rescue for man overboard and downed pilot plotting. |

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| General MN <i>Skill Area</i> | Navigation |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Plot precision anchorage |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Plot approaches and anchorage • Calculate anchor drop distances • Compute and plot drag circles • Compute and plot swing circles |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Dutton's Navigation and Piloting</i>, 14th Ed.; Ch. 13 • <i>The American Practical Navigator: Bowditch</i>, Pub No. 9; Ch. 8 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on plotting a precision anchorage, swing circle, drag circle, and anchor drop distances. |

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| General MN <i>Skill Area</i> | Navigation |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Establish ship's position during various navigational situations |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Obtain bearings and ranges from fixed points on navigational charts • Compute latitudes and longitudes from fixed information • Plot latitudes and longitudes from fixed information • Plot deviation and variation on charts • Provide mark times • Plot visual fixes • Determine radar range and bearing errors • Determine ship's position using navigational aids • Compare ship's position data with bridge data • Compare radar scope presentation with the applicable chart • Select fixed navigational points with the navigational plotter • Maintain plot of ship's track using dead reckoning (DR) |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>The American Practical Navigator: Bowditch</i>, Pub No. 9; Ch. 7, 8, 13 • <i>Dutton's Navigation and Piloting</i>, 14th Ed.; Ch. 8, 11, 12 |

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| <p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p> | <p>You can expect questions on the various ways of establishing a ship's position while underway in both inland and open ocean steaming.</p> |
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Advancement Handbook for MN3

| General MN <i>Skill Area</i> | Navigation |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Calculate set and drift, and compensating and correcting courses |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Calculate compensating courses and speeds • Calculate correcting courses and speeds • Calculate set and drift |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>The American Practical Navigator: Bowditch</i>, Pub No. 9; Ch. 7 • <i>Dutton's Navigation and Piloting</i>, 14th Ed.; Ch 12 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on calculating set and drift and on compensating and correcting courses and speeds. |

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| General MN <i>Skill Area</i> | Navigation |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Interpret/recommend fog and whistle signals in accordance with International Rules of the Road |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Obtain low visibility lookout information • Plot sound signals during low visibility navigation • Determine sound signals for an existing situation • Recommend low visibility sound signals • Compare and correlate low visibility lookout information |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Lookout Training Handbook</i>, NAVEDTRA 12968 • <i>Navigational Rules International-Inland</i>, COMDTINST M16672.2 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on sound and fog signals used in normal and low visibility steaming. |

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| General MN <i>Skill Area</i> | Navigation |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Plot various navigational data |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Plot latitudes and longitudes from navigational fix information • Determine and apply magnetic deviation and variation • Plot visual bearings and radar range and bearing information • Obtain fathometer readings and compare them with charts |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>The American Practical Navigator: Bowditch</i>, Pub No. 9; Ch. 6, 8, 13, 25 • <i>Dutton's Navigation and Piloting</i>, 14th Ed.; Ch. 3, 5, 11, 12, 36 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on procedures for plotting fix information from visual and radar information, applying magnetic variation and deviation and comparing fathometer readings to navigational charts. |

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| General MN <i>Skill Area</i> | Electrical and Electronic Systems Operations |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Energize and de-energize electronic equipment |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to energize and de-energize various electronic equipment in the Combat Information Center |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • Combat Systems Operational Sequencing System manuals • NAVSEA manuals covering your ship's specific radars • <i>XXX Class Combat Systems Doctrine</i>, COMNAVSURFLANT/COMNAVSURFPA CINST C3516 SERIES |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the procedures for energizing and de-energizing various electronic equipment in CIC. |

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| General MN <i>Skill Area</i> | Electrical and Electronic Systems Operations |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Operate radar equipment |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Operate radar repeaters • Measure radar sensitivity • Operate equipment under casualty conditions • Restore equipment operations under emergency conditions |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • Combat Systems Operational Sequencing System manuals • NAVSEA manuals covering your ship's specific radars • <i>XXX Class Combat Systems Doctrine</i>, COMNAVSURFLANT/COMNAVSURFPA CINST C3516 SERIES |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the operation of various radar equipment in both normal and casualty modes. |

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| General MN <i>Skill Area</i> | Electrical and Electronic Systems Operations |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Operate Naval Tactical Command Systems Afloat (NTCS-A)/Joint Maritime Control Information Systems (JMCIS) |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to operate Naval Tactical Command Afloat (NTCS-A)/Joint Maritime Control Information System (JMCIS) terminals |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>JMCIS/NTCS-A Users Guide Vol. I, JMCIS/NTCS-A-UG-001</i> • <i>JMCIS/NTCS-A Users Guide Vol .II, JMCIS/NTCS-A-UG-001</i> |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the operation of the NTCS-A/JMCIS terminals. |

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| General MN <i>Skill Area</i> | Communications |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Set up and test radio circuits and speakers in CIC in accordance with the COMM PLAN |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Test communications systems • Set equipment conditions according to emission control (EMCON) requirements |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>XXX Class Combat Systems Doctrine, COMNAVSURFLANT/COMNAVSURFPA CINST C3516 series</i> |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on setting up radio circuits and assigned speakers in CIC, as specified in the ship class combat systems doctrine. |

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| General MN <i>Skill Area</i> | Communications |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Perform authentication procedures |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Perform timed authentication • Perform challenge and reply authentication |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Basic Operational Communications Doctrine</i>, NWP 6-01; Ch. 10 • <i>Communications Instructions – Security</i>, Allied Communication Publication, ACP-122; Ch.4 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on authentication procedures. |

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| General MN <i>Skill Area</i> | Communications |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Encode/decode communications |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to encode and decode tactical communications |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Allied Maritime Tactical Signal and Maneuvering Book</i>, Allied Tactical Publication, ATP 1, Vol. 2 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on encoding and decoding tactical communications. |

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| General MN <i>Skill Area</i> | Communications |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Transmit Beadwindow and Gingerbread Reports |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Initiate Beadwindow reports • Initiate Gingerbread reports |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Basic Operational Communications Doctrine</i>, NWP 6-01; Ch. 10 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on Beadwindow and Gingerbread procedures. |

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| General MN <i>Skill Area</i> | Communications |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Perform internal and external communications |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Perform internal communications • Perform external communications |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Basic Military Requirements</i>, NAVEDTRTA 12043 • <i>Communication Instructions General</i>, Allied Communications Publication, ACP-121 • <i>Communications Instructions Radiotelephone Procedures</i>, Allied Communications Publication ACP-125 • <i>MHC 51 Class Combat System Doctrine</i>, COMINERWARCOMINST C3516.1 • <i>MCM 1 Class Tactical Manual</i>, NWP 3-20.6.19 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on internal and external communication procedures and circuit designations. |

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| General MN <i>Skill Area</i> | Small Arms/Security Forces Equipment |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Inventory, stow, and issue small arms |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Inventory small arms • Stow small arms • Issue small arms |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Ammunition Afloat</i>, NAVSEA OP 4 • <i>Mineman Volume 7</i>, NAVEDTRA 12454 • <i>Conventional Ammunition Integrated Management System</i>, SPCCINST 8010.12 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on inventorying, stowing and issuing small arms. |

Advancement Handbook for MN3

| General MN <i>Skill Area</i> | Small Arms/Security Forces Equipment |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Load, fire, and unload small arms |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Load small arms • Fire small arms • Unload small arms |
| References you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Browning Machine Gun, Caliber .50 HB, FM 23-65</i> • <i>40-MM Grenade Launcher M79, TM 9-1010-205-10</i> • <i>40-MM Grenade Launcher M79, TM 9-1010-205-24</i> • <i>Machine Gun, 7.62-MM, M60, TM 9-1005-224-10</i> • <i>Machine Gun, 7.62-MM, M60, TM 9-1005-224-24</i> • <i>Military Shotgun, 12 Gauge, Pump Action, Model 870, TO 11W3-6-2-1</i> • <i>Mineman Volume 7, NAVEDTRA 12454</i> • <i>Mortar, 60MM, M224, TM 9-1010-223-10</i> • <i>Pistol, Caliber .45, Automatic, M1911A1, TM 9-1005-211-12</i> • <i>Pistol, Semiautomatic, 9mm, M9, SW 370-AA-OPI-010/9mm</i> • <i>Rifle, 7.62-MM, M14, TM 9-1005-223-10</i> • <i>Rifle, 7.62-MM, M14, TM 9-1005-223-20</i> |

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| <p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p> | <p>You can expect questions on loading, firing, and unloading of pistols, rifles, shotguns, machine guns, and grenade launchers.</p> |
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| General MN <i>Skill Area</i> | Small Arms/Security Forces Equipment |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Launch pyrotechnics |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Launch marine location markers • Operate smoke and illumination signals • Operate the Mk 1 Mods 0 and 1 Navy lights • Load, fire, and unload pyrotechnic devices and personnel distress signal kit |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Ammunition Afloat</i>, NAVSEA OP 4 • <i>Mineman Volume 7</i>, NAVEDTRA 12454 • <i>Pyrotechnic Screening, Marking, and Countermeasures Devices</i>, NAVSEA SW050-AB-MMA-010 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on loading, firing, and unloading pistols, rifles, shotguns, machine guns, and grenade launchers. |

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| General MN <i>Skill Area</i> | Small Arms/Security Forces Equipment |
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| <i>A skill</i> you are expected to perform from the General Skill Area above: | Field strip, clean, and inspect small arms and grenade launchers |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Field strip small arms • Clean small arms • Perform inspect of small arms |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Browning Machine Gun, Caliber .50 HB, FM 23-65</i> • <i>40-MM Grenade Launcher M79, TM 9-1010-205-10</i> • <i>40-MM Grenade Launcher M79, TM 9-1010-205-24</i> • <i>Machine Gun, 7.62-MM, M60, TM 9-1005-224-10</i> • <i>Machine Gun, 7.62-MM, M60, TM 9-1005-224-24</i> • <i>Military Shotgun, 12 Gauge, Pump Action, Model 870, TO 11W3-6-2-1</i> • <i>Mortar, 60MM, M224, TM 9-1010-223-10</i> • <i>Pistol, Caliber .45, Automatic, M1911A1, TM 9-1005-211-12</i> • <i>Pistol, Semiautomatic, 9mm, M9, SW 370-AA-OPI-010/9mm</i> • <i>Rifle, 7.62-MM, M14, TM 9-1005-223-10</i> • <i>Rifle, 7.62-MM, M14, TM 9-1005-223-20</i> |

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| <p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p> | <p>You can expect questions on assembling, disassembling, cleaning, and maintaining pistols, rifles, shotguns, machine guns, and grenade launchers.</p> |
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| General MN <i>Skill Area</i> | Small Arms/Security Forces Equipment |
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| <i>A skill</i> you are expected to perform from the General Skill Area above: | Handle, stow, package, unpackage, and inventory MNS destructors, pyrotechnics ammunition, and small arms ammunition |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Handle, stow, package, unpackage, and inventory the MNS destructor • Handle, stow, package, unpackage, and inventory pyrotechnic ammunition • Handle, stow, package, unpackage, and inventory small arms ammunition |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Ammunition Afloat</i>, NAVSEA OP 4 • <i>Conventional Ammunition Integrated Management System</i>, SPCCINST 8010.12 • <i>Mineman Volume 7</i>, NAVEDTRA 12454 • <i>Pyrotechnic Screening, Marking, and Countermeasures Devices</i>, NAVSEA SW050-AB-MMA-010 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the safe handling, stowing, packing, unpacking, and inventorying of the MNS destructor, pyrotechnic ammunition, and small arms ammunition. |

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| General MN <i>Skill Area</i> | Small Arms/Security Forces Equipment |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Assemble and disassemble MNS mission packages |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Assemble and disassemble mission package-1 (MP-1) • Assemble and disassemble mission package-2 (MP-2) • Assemble and disassemble mission package-3 (MP-3) |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Ammunition Afloat</i>, NAVSEA OP 4 • <i>Destructor, Explosive, Mk 57 Mod 0, Operation and Maintenance Instructions</i>, NAVSEA SW570-EO-MMO-070 • <i>Mine Neutralization System, Cable Cutter Mk 26 Mod 0, Operation and Maintenance Instructions</i>, NAVSEA SW570-EO-MMO-080 • <i>Mineman Volume 6</i>, NAVEDTRA 12453 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the assembly and disassembly of the MNS mission packages. |

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| General MN <i>Skill Area</i> | Sonar Operations |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Conduct searches using mine-hunting sonar |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Detect contacts using mine-hunting sonar • Report contacts • Log contacts |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>MCM 1 Class Tactical Manual</i>, NWP 3-20.6.19 (REV.A) • <i>Minehunting Sonar Set</i>, AN/SQQ-32(V)1, Volume 1, NAVSEA SE315-RO-MMO-010/SQQ-32(V)1 • <i>Minehunting Sonar Set</i>, AN/SQQ-32(V)1, Volume 2, NAVSEA SE315-RO-SOM-010/SQQ-32(V)1 • <i>Minehunting Sonar Set</i>, AN/SQQ-32(V)2, Volume 1, NAVSEA SE315-R1-MMO-010/SQQ-32(V)2 • <i>Minehunting Sonar Set</i>, AN/SQQ-32(V)2, Volume 2, NAVSEA SE315-R1-SOM-010/SQQ-32(V)2 • <i>Mineman Volume 6</i>, NAVEDTRA 12453 • <i>Surface Mine Countermeasures Operations</i>, NWP 3-15.21 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on how to operate minehunting sonars and the procedures for detecting and reporting contacts. |

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| General MN <i>Skill Area</i> | Sonar Operations |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Track contacts on minehunting sonar |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Track contacts using minehunting sonar • Determine a contact's bearing and range |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>MCM 1 Class Tactical Manual</i>, NWP 3-20.6.19 (REV.A) • <i>Minehunting Sonar Set</i>, AN/SQQ-32(V)1, Volume 1, NAVSEA SE315-RO-MMO-010/SQQ-32(V)1 • <i>Minehunting Sonar Set</i>, AN/SQQ-32(V)1, Volume 2, NAVSEA SE315-RO-SOM-010/SQQ-32(V)1 • <i>Minehunting Sonar Set</i>, AN/SQQ-32(V)2, Volume 1, NAVSEA SE315-R1-MMO-010/SQQ-32(V)2 • <i>Minehunting Sonar Set</i>, AN/SQQ-32(V)2, Volume 2, NAVSEA SE315-R1-SOM-010/SQQ-32(V)2 • <i>Mineman Volume 6</i>, NAVEDTRA 12453 • <i>Surface Mine Countermeasures Operations</i>, NWP 3-15.21 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on operating minehunting sonars and tracking sonar contacts. |

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| General MN <i>Skill Area</i> | Sonar Operations |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Classify contacts on minehunting sonar |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Determine a contact's characteristics • Determine a contact's CPA |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>MCM 1 Class Tactical Manual</i>, NWP 3-20.6.19 (REV.A) • <i>Minehunting Sonar Set</i>, AN/SQQ-32(V)1, Volume 1, NAVSEA SE315-RO-MMO-010/SQQ-32(V)1 • <i>Minehunting Sonar Set</i>, AN/SQQ-32(V)1, Volume 2, NAVSEA SE315-RO-SOM-010/SQQ-32(V)1 • <i>Minehunting Sonar Set</i>, AN/SQQ-32(V)2, Volume 1, NAVSEA SE315-R1-MMO-010/SQQ-32(V)2 • <i>Minehunting Sonar Set</i>, AN/SQQ-32(V)2, Volume 2, NAVSEA SE315-R1-SOM-010/SQQ-32(V)2 • <i>Mineman Volume 6</i>, NAVEDTRA 12453 • <i>Surface Mine Countermeasures Operations</i>, NWP 3-15.21 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on classifying sonar contacts. |

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| General MN <i>Skill Area</i> | Sonar Operations |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Conduct XBT/XSV drops and log information |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to launch expendable bathythermographs and expendable sound velocity bathythermographs (XBT/XSV) |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Bathythermograph/Sound Velocimeter, AN/BOH-7A, Oceanographic Data Systems Surface Ship Applications</i>, NAVSEA 0910-LP-242-6900 • <i>Mineman Volume 6</i>, NAVEDTRA 12453 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on how an expendable bathythermograph operates and the procedures for its operation. |

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| General MN <i>Skill Area</i> | Mechanical Systems Operation |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Operate the mine neutralization system (MNS) |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Pilot the mine neutralization vehicle (MNV) • Install mission packages on the mine neutralization vehicle (MNV) • Perform mine neutralization |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Destructor, Explosive, Mk 57 Mod 0, Operation and Maintenance Instructions</i>, NAVSEA SW570-EO-MMO-070 • <i>Mine Neutralization System Cable Cutter Mk 26 Mod 0, Operation and Maintenance Instructions</i>, NAVSEA SW570-EO-MMO-080 • <i>Mine Neutralization System Cable Cutter, Exercise, Mk 27 Mod 1, Operation and Maintenance</i>, NAVSEA SW570-EO-MMO-090 • <i>Mine Neutralization System, AN/SLQ-48(V), Operation and Maintenance Instructions</i>, NAVSEA SW570-AA-OMI-010 • <i>Mineman Volume 6</i>, NAVEDTRA 12453 • <i>Sonar Communication Set AN/WQC-2A, Operation Instructions</i>, NAVSEA 0967-LP-490-1640 • <i>Surface Mine Countermeasures Operations</i>, NWP 3-15.21 |

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| <p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p> | <p>You can expect questions on the equipment and capabilities of the MNS. How to operate and pilot the MNV. How to install, and deploy the mission packages. Also questions covering the mine neutralization operational phases.</p> |
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Advancement Handbook for MN3

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| General MN <i>Skill Area</i> | Mechanical Systems Operation |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Deploy and recover mine countermeasures equipment |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Operate the vehicle handling system (VHS) • Operate the multipurpose crane • Operate the umbilical cable handling system (UCHS) • Deploy and recover the MNV |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Handling System, Vehicle, Mine Locator Submersible, Operation and Maintenance with Parts List</i>, NAVSEA SW570-AA-OMP-020 • <i>Mine Neutralization System, AN/SLQ-48(V), Operation and Maintenance Instructions</i>, NAVSEA SW570-AA-OMI-010 • <i>Mineman Volume 6</i>, NAVEDTRA 12453 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the equipment, operation, and capabilities of the VHS, UCHS, and the multipurpose crane. Also questions on the deployment and recovery of the MNV. |

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| General MN <i>Skill Area</i> | Mechanical Systems Operation |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Rig, stream, and recover mechanical minesweeping equipment |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Rig mechanical minesweeping equipment • Stream mechanical minesweeping equipment • Recover mechanical minesweeping equipment |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>MCM 1 Class Tactical Manual</i>, NWP 3-20.6.19 (Rev.A) • <i>Surface Mine Countermeasures, MCM Class Ships</i>, NAVSEA SW570-FO-MMO-030 • <i>Surface Mine Countermeasures, MCM Class Ships</i>, NAVSEA SW570-FO-MMO-040 • <i>Surface Mine Countermeasures Operations</i>, NWP 3-15.21 (REV.B) |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the equipment and operation of mechanical minesweeping equipment. How to install and remove minesweeping cutters, floats, and multipurpose kites. Also, streaming and recovering the various different types of mechanical sweep configurations. |

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| General MN <i>Skill Area</i> | Mechanical Systems Operation |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Rig, stream, and recover acoustic minesweeping equipment |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Rig acoustic minesweeping equipment • Stream acoustic minesweeping equipment • Recover acoustic minesweeping equipment |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>MCM 1 Class Tactical Manual</i>, NWP 3-20.6.19 (Rev.A) • <i>Surface Mine Countermeasures, MCM Class Ships</i>, NAVSEA SW570-FO-MMO-030 • <i>Surface Mine Countermeasures, MCM Class Ships</i>, NAVSEA SW570-FO-MMO-040 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the equipment and operation of acoustic minesweeping equipment. How the acoustic devices operate. Also, streaming and recovering the various types of acoustic sweep configurations. |

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| General MN <i>Skill Area</i> | Mechanical Systems Operation |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Rig, stream, and recover magnetic minesweeping equipment |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Rig magnetic minesweeping equipment • Stream magnetic minesweeping equipment • Recover magnetic minesweeping equipment |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Surface Mine Countermeasures, MCM Class Ships</i>, NAVSEA SW570-FO-MMO-030 • <i>Surface Mine Countermeasures, MCM Class Ships</i>, NAVSEA SW570-FO-MMO-040 • <i>Surface Mine Countermeasures Operations</i>, NWP 3-15.21 (Rev.B) |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the equipment and operation of magnetic minesweeping equipment. How the magnetic minesweeping cable operates. Also, streaming and recovering the various types of magnetic sweep configurations. |

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| General MN <i>Skill Area</i> | Mechanical Systems Operation |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Rig, stream, and recover combination minesweeping equipment |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Rig combination minesweeping equipment • Stream combination minesweeping equipment • Recover combination minesweeping equipment |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Surface Mine Countermeasures, MCM Class Ships</i>, NAVSEA SW570-FO-MMO-030 • <i>Surface Mine Countermeasures, MCM Class Ships</i>, NAVSEA SW570-FO-MMO-040 • <i>Surface Mine Countermeasures Operations</i>, NWP 3-15.21 (Rev.B) |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the equipment and operation of combination minesweeping equipment. Also, streaming and recovering the various types of combination sweep configurations. |

Part 2

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| General MN <i>Skill Area</i> | Ordnance/Component Maintenance/Handling |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Supervise the handling of ammunition |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to conduct, control, and coordinate the handling of ammunition |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Ammunition Afloat</i>, NAVSEA OP 4 • <i>Ammunition and Explosives Ashore Safety Regulations for Handling, Storing, Production, Renovation, and Shipping</i>, NAVSEA OP 5 Vol. 1 • <i>Mine Components A Through C, Description and Class-B Criteria</i>, NAVSEA SW550-AA-MMI-010 • <i>Mine Components D Through F, Description and Class-B Criteria</i>, NAVSEA SW550-AA-MMI-020 • <i>Mine Components G Through W, Description and Class-B Criteria</i>, NAVSEA SW550-AA-MMI-030 • <i>Motor Vehicle Driver's Handbook Ammunition, Explosives, and Related Hazardous Materials</i>, NAVSEA OP 2239 • <i>Handling, Packaging, Storing, and Transportation of Underwater Mines and Destructors for Shore-based/Shipboard Operations</i>, NAVSEA SW023-AB-WHS-010 |

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| <p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p> | <p>You can expect questions about the procedures for the safe handling, packaging, storing, and transporting of mines, mine components, ammunition, and pyrotechnics.</p> |
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| General MN <i>Skill Area</i> | Mine Warfare Operations |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Perform final inspections on assembled mines |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to perform final inspections on assembled mines |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Destructors, Mk 36 and Mk 40 and Mines, Mk 62 and 63, Description, Assembly, and Test</i>, NAVSEA SW551-A2-MMI-010 • <i>Mine, Underwater, Mark 65 Mods 0 and 1, Description and Procedures</i>, NAVSEA SW551-A3-MMI-010 • <i>Mines, Underwater: Actuation; Description, Assembly, and Tests</i>, NAVSEA SW550-AE-MMI-040 • <i>Mines, Underwater: Laying; Description, Assembly, and Disassembly</i>, NAVSEA SW550-AE-MMI-050 • <i>Mines, Underwater: Exercise and Training, Description and Class-B Criteria</i>, NAVSEA SW550-AE-MMI-010 • <i>Versatile Exercise Mine System (VEMS), Description and Maintenance</i>, NAVSEA SW550-AE-MMI-070 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions about performing final inspections on assembled mines as a member of a mine warfare team. |

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| General MN <i>Skill Area</i> | Mine Warfare Operations |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Set hazardous radiation safeguards (RADHAZ/HERO) |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Set radiation hazards (RADHAZ) • Set hazards of electromagnetic radiation to ordnance (HERO) safeguards |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Electromagnetic Radiation Hazards</i>, NAVSEA OP 3565, Vol. 2 • <i>Mine Components A Through C, Description and Class-B Criteria</i>, NAVSEA SW550-AA-MMI-010 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions about setting radiation safeguards for mines as a member of a mine warfare team. |

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| General MN <i>Skill Area</i> | Technical Administration |
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| <i>A skill</i> you are expected to perform from the General Skill Area above: | Recommend additions, deletions, and changes to the Mine Bill of Materials (MBOM) |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to make additions, deletions, and changes to the Mine Bill of Material (MBOM) |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Supply Procedures</i>, COMOMAGINST 4000.1 • <i>Guidance on Mine Bill of Materials (MOBM), Initial Outfitting Lists (IOLs) and Change Requests</i>, COMOMAG/MOMAGINST 8550.13 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions about how to make additions, deletions, and changes to the mine bill of materials (MBOM) |

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| General MN <i>Skill Area</i> | Technical Administration |
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| <i>A skill</i> you are expected to perform from the General Skill Area above: | Prepare ammunition requisitions and maintain ammunition stock record cards |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Draft/cancel ammunition requisitions • Update ammunition stock record cards |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Supply Procedures</i>, COMOMAGINST 4000.1 • <i>Supply Management of Ammunition</i>, CAIMS, SPCCINST 8010.12 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions about how to requisition mines and mine material. Also, how to maintain stock record cards. |

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| General MN <i>Skill Area</i> | Technical Administration |
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| <i>A skill</i> you are expected to perform from the General Skill Area above: | Draft Ammunition Transaction Reports (ATRs) |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Draft ammunition transaction reports • Update ATR records |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Supply Procedures</i>, COMOMAGINST 4000.1 • <i>Supply Management of Ammunition</i>, CAIMS, SPCCINST 8010.12 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions about drafting and keeping ATR records. |

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| General MN <i>Skill Area</i> | Technical Administration |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Compute the life of mine batteries |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to compute, record, and document life of mine batteries |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Mine Components A Through C, Description and Class-B Criteria</i>, NAVSEA SW550-AA-MMI-010 • <i>Supply Procedures</i>, COMOMAGINST 4000.1 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions about computing, recording, and documenting the life of mine batteries. |

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| General MN <i>Skill Area</i> | Technical Administration |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Conduct supply inventories |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to conduct supply inventories |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Supply Procedures</i>, COMOMAGINST 4000.1 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions about how to conduct various supply inventories. |

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| General MN <i>Skill Area</i> | Quality Assurance |
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| <i>A skill</i> you are expected to perform from the General Skill Area above: | Perform quality assurance inspections |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to conduct quality assurance (QA) inspections |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Naval Ordnance Quality Assurance Procedures for Fleet Activities</i>, NAVSEA QAP 100) • <i>Quality Assurance (QA) Procedures</i>, COMOMAG/MOMAGINST 4855.1 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions about how to conduct quality assurance inspections. |

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| General MN <i>Skill Area</i> | Quality Assurance |
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| <i>A skill</i> you are expected to perform from the General Skill Area above: | Verify adherence to standard inspection procedures (SIPs) |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to verify adherence to standard inspection procedures |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Naval Ordnance Quality Assurance Procedures for Fleet Activities</i>, NAVSEA QAP 100) • <i>Quality Assurance (QA) Procedures</i>, COMOMAG/MOMAGINST 4855.1 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions about how to verify standard inspection procedures during mine assembly and disassembly. |

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| General MN <i>Skill Area</i> | Quality Assurance |
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| <i>A skill</i> you are expected to perform from the General Skill Area above: | Inspect testing procedures |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to inspect testing procedures |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Naval Ordnance Quality Assurance Procedures for Fleet Activities</i>, NAVSEA QAP 100 • <i>Quality Assurance (QA) Procedures</i>, COMOMAG/MOMAGINST 4855.1 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions about how to inspect testing procedures for mines and mine components. |

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| General MN <i>Skill Area</i> | Quality Assurance |
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| <i>A skill</i> you are expected to perform from the General Skill Area above: | Perform receipt inspection on ordnance |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Assure that palletized unit loads are properly secured before they are off-loaded from the carrier • Compare material received against the DD-1348 or other invoice or shipping document to verify its identity and count (or weight as appropriate) • Visually examine material for evidence of shipping or handling damage or deterioration • Visually examine the material's preservation and packaging for suitability for further handling, storage, or shipment. • Visually examine explosive ordnance to assure that no hazardous conditions exist • Compare gun ammunition lot numbers with those listed in OD 17190 and NARs (Notices of Ammunition Reclassifications) • Sample or monitor the inspections conducted by ordnance personnel • Authenticate material condition tags and labels • Prepare acceptance/discrepancy reports |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Naval Ordnance Quality Assurance Procedures for Fleet Activities</i>, NAVSEA QAP 100 • <i>Quality Assurance (QA) Procedures</i> COMOMAG/MOMAGINST 4855.1 • <i>Ammunition Afloat</i>, NAVSEA OP 4 |

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| | <ul style="list-style-type: none"> • <i>Ammunition and Explosives Ashore Safety Regulations for Handling, Storage, Production, Renovation and Shipping, NAVSEA OP 5 Volume 1</i> |
| <p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p> | <p>You can expect questions about the safe handling, storage, and shipping of ordnance material; the different types of material condition tags and labels and when they should be used; and the preparation of acceptance or discrepancy reports.</p> |

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| General MN <i>Skill Area</i> | Tactical Support |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Evaluate tactical and EMCON Situations |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Evaluate tactical situations • Evaluate and monitor EMCON situations |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Allied Maritime Tactical Instructions and Procedures</i>, ATP-1, Vol. 1, Allied Tactical Publication; Ch. 5 • <i>Electronic Warfare Coordination</i>, NWP 3-13.1.13; Ch 8, 9 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on tactical situations (i.e. rules of the road, maneuvering board, special plots, weapons employment) and the setting, evaluation and monitoring of EMCON. |

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| General MN <i>Skill Area</i> | Search and Rescue |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Coordinate SAR operations with SAR facilities |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to coordinate assistance with a SAR facility |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>National Search and Rescue Manual Vol. I: National Search and Rescue System</i>, JP 3-50; Ch 2, 3, 4, 5, 6 • <i>Search and Rescue</i>, ATP 10, Allied Tactical Publication; Ch. 4 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the SAR organization and the coordination between the SAR facilities and the SAR units. |

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| General MN <i>Skill Area</i> | Search and Rescue |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Prepare SAR Aircraft Search Patterns and Provide Approaches and Vectors to SAR Aircraft |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Prepare aircraft search patterns • Provide SAR approaches for SAR aircraft • Provide vectors for SAR aircraft |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>National Search and Rescue manual Vol I: National Search and Rescue System</i>, JP 3-50; App. D, E • <i>National Search and Rescue Manual Vol II: Planning Handbook</i>, JP 3-05.1; Ch . 1, 2, 3, 4, 7 • <i>Search and Rescue</i>, ATP 10, Allied tactical Publication; Ch. 6, 7 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the various aircraft search patterns and the communications between the controlling unit and search aircraft. |

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| General MN <i>Skill Area</i> | Search and Rescue |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Compute parachute drift |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to compute parachute drift |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>National Search and Rescue manual Vol I: National Search and Rescue System, JP 3-50; Ch. 5</i> |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on computing parachute drift. |

Advancement Handbook for MN2

| General MN <i>Skill Area</i> | Navigation |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Prepare CIC for precision anchorage |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to prepare CIC for precision anchorage |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Navigation and Piloting</i>, Dutton's; Ch. 13 • <i>The American Practical Navigator</i>, Bowditch; Ch. 8 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the procedures required to prepare CIC for and the conduct of a precision anchorage. |

Advancement Handbook for MN2

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| General MN <i>Skill Area</i> | Navigation |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Maintain the CIC chart library |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Maintain a chart library • Maintain chart correction cards |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Catalog of Maps, Charts, and Related Products</i>, National Imagery and Mapping Agency Hydrographic Products Part 2 – Volume 1 • <i>Navigation and Piloting</i>, Dutton's; Ch. 5 • <i>Nautical Chart Symbols, Abbreviations, and Terms</i>, Chart 1 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on how to make chart corrections, how to order charts, weekly Notices to Mariners, and the DMA chart system. |

Advancement Handbook for MN2

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| General MN <i>Skill Area</i> | Communications |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Establish and test communications patches |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Establish radio communication patches • Test radio communication patches |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • Applicable Combat Systems Operational Sequencing System manuals (CSOSS) • Applicable Systems Operational Manuals (SOMs) |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the procedures for establishing and testing radio communication patches in CIC. |

Advancement Handbook for MN2

| General MN <i>Skill Area</i> | Communications |
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| <i>A skill you are expected to perform from the General Skill Area above:</i> | Restore lost communications |
| <i>Knowledge you should have to perform this skill:</i> | <ul style="list-style-type: none">• How to restore lost radio communications |
| <i>References you should study to gain the knowledge you need to perform this skill:</i> | <ul style="list-style-type: none">• Applicable Combat Systems Operational Sequencing System manuals (CSOSS)• Applicable Systems Operational Manuals (SOMs) |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the procedures for restoring lost radio communications. |

Advancement Handbook for MN2

| General MN <i>Skill Area</i> | Communications |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Draft Operational Reports (OPREP), Situational Reports (SITREP), and Mine Warfare (MIW) Reports |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Draft operational reports (OPREPS) • Draft situational reports (SITREPS) • Draft mine warfare reports (MIW) |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Allied Maritime Tactical Instructions and Procedures</i>, ATP-1, Vol. 1, Allied Tactical Publication; Ch. 4, 6 • <i>Operational Reports</i>, NWP 1-03.1 • <i>Surface Mine Countermeasures Operations</i>, NWP 3-15.21 (Rev.B) |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the content and purposes of various Operational Reports (OPREPS, MOVEREPS, CASREPS, LOGREQS, etc.) and situational reports. |

Part 3

Advancement Handbook for MN1

Advancement Handbook for MN1

| General MN <i>Skill Area</i> | Technical Administration |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Prepare Mine Master Record Sheets |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none">• How to prepare Mine Master Records Sheets |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none">• <i>Underwater Mine maintenance System</i>, NAVSEA SW550-FO-PMS-010 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on how to prepare, process, verify, and validate Mine Master Record Sheets. |

Advancement Handbook for MN1

| General MN <i>Skill Area</i> | Technical Administration |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Review and submit mine-system data reports |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to review mine-system data reports |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Underwater Mine maintenance System</i>, NAVSEA SW550-FO-PMS-010 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on how to review and submit mine-system data reports. |

Advancement Handbook for MN1

| General MN <i>Skill Area</i> | Technical Administration |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Review and submit reports of mines and associated equipment |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Review operational reports of mines and associated equipment • Review inspection reports of mines and associated equipment |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Underwater Mine maintenance System, NAVSEA SW550-FO-PMS-010</i> • <i>Various reports as directed in the appropriate technical manual</i> |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on how to review and submit operational and inspection reports of mines and associated equipment. |

Advancement Handbook for MN1

| General MN <i>Skill Area</i> | Technical Administration |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Prepare and maintain mine assembly flow charts |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to draft and update mine assembly flow charts |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Standard Production and Processing Procedures for Mines</i>, COMOMAG/MOMAGINST 8550.12 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on how to draft and update mine assembly flow charts. |

Advancement Handbook for MN1

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| General MN <i>Skill Area</i> | Mine Management and Supervision |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Prepare Planned Maintenance System (PMS) maintenance schedules |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to prepare maintenance schedules |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Underwater Mine maintenance System</i>, NAVSEA SW550-FO-PMS-010 • <i>Service Mine Maintenance Workload Schedule</i>, COMOMAG/MOMAGINST 8550.4 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on how to implement a service mine maintenance workload schedule. |

Advancement Handbook for MN1

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| General MN <i>Skill Area</i> | Mine Management and Supervision |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Review mine work orders and requests |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to review mine work orders |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Standard Procedures for Initiating and Processing Work Orders</i>, COMOMAG/MOMAGINST 4850.1 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on processing work orders. |

Advancement Handbook for MN1

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| General MN <i>Skill Area</i> | Mine Management and Supervision |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Direct final preparation of mines for delivery |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to direct the final preparation of mines for delivery |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • Appropriate technical manuals and instructions |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on how to conduct, inspect, and direct the final preparation of various mines. |

Advancement Handbook for MN1

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| General MN <i>Skill Area</i> | Mine Management and Supervision |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Direct mine maintenance, assembly, and disassembly |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • The requirements of mine maintenance, assembly, and disassembly; and how to direct these activities |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • Appropriate technical manuals, safety manuals, and instructions |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on mine maintenance, assembly, and disassembly. |

Advancement Handbook for MN1

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| General MN <i>Skill Area</i> | Mine Maintenance and Supervision |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Direct maintenance and upkeep of magazines and work spaces |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • Required maintenance and upkeep of magazines and work spaces and how to direct these activities |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • Appropriate technical manuals and instructions |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on maintenance and upkeep of magazines and work spaces. |

Advancement Handbook for MN1

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| General MN <i>Skill Area</i> | Mine Management and Supervision |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Coordinate movement of explosives within the command |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to coordinate movement of explosives |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • Appropriate technical manuals, safety manuals, and instructions |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions about the safe handling and transportation of explosives within the command. |

Advancement Handbook for MN1

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| General MN <i>Skill Area</i> | Mine Management and Supervision |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Direct the assembly and disassembly of MNS mission packages |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • The requirements associated with assembling and disassembling of MNS mission packages and how to direct those activities |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • Appropriate technical manuals and instructions |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on how to assemble and disassemble MNS mission packages. |

Advancement Handbook for MN1

| General MN <i>Skill Area</i> | Tactical Support |
|--|---|
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Train ship's lookouts |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> Requirements and procedures associated with ship's lookouts |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> <i>Lookout Training Handbook</i>, NAVEDTRA 12968 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the duties and responsibilities of a lookout and the reports a lookout should make. |

Advancement Handbook for MN1

| General MN <i>Skill Area</i> | Tactical Support |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Prepare CIC for special evolutions |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Set up CIC for swept channels • Set up CIC for getting underway • Set up CIC UNREP |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • Ship's Class Combat Systems Doctrine, COMNAVSURFLANT/COMNASVSURF PACINST C3516 SERIES |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on how to prepare CIC for special evolutions such as UNREP, swept channels, getting underway, etc. |

Advancement Handbook for MN1

| General MN <i>Skill Area</i> | Tactical Support |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Transition CIC between conditions of readiness (GQ, 1M/2M, 2M/MH) |
| <i>Knowledge</i> you should have to perform this skill: | How to: <ul style="list-style-type: none"> • Transition CIC between conditions I, II, III, and IV • Transition CIC between mine readiness conditions |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Ship's Class Combat Systems Doctrine, COMNAVSURFLANT/COMNASVSURF PACINST C3516 SERIES</i> • <i>MCM 1 Class Tactical Manual, NWP 3-20.6.19 (Rev.A)</i> |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the procedures for transitioning CIC between the different conditions of readiness. |

Advancement Handbook for MN1

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| General MN <i>Skill Area</i> | Search and Rescue |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Coordinate SAR teams |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to coordinate SAR teams |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>National Search and Rescue Manual Vol. I: National Search and Rescue System</i>, JP 3-50; Ch 2, 3, 4, 5, 6 • <i>Search and Rescue</i>, ATP 10, Allied Tactical Publication; Ch. 4 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on how to conduct a SAR mission, the coordination required with other units, and the communications required between the search units and the shore facilities. |

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| General MN Skill Area | Tactical Support |
|--|---|
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Evaluate radar degradations due to environmental conditions |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to evaluate radar degradations caused by environmental conditions |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Mineman Vol.6</i>, NAVEDTRA 12453 • <i>Radar Principles</i>, Navy Electricity and Electronics Training Series – Module 18 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the effects the environment has on radar presentations. |

Advancement Handbook for MN1

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| General MN Skill Area | Deck Seamanship |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Direct salvage operations |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none">• Requirements of salvage operations and how to direct salvage activities |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none">• Appropriate technical manuals and instructions |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on salvage operations. |

Advancement Handbook for MN1

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| General MN <i>Skill Area</i> | Electronic Systems Operations |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Conduct combat systems testing |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to conduct combat systems testing |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • Applicable Combat Systems Operational Sequencing System (CSOSS) manuals |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the procedures of conducting a combat systems test. |

Advancement Handbook for MN1

| General MN <i>Skill Area</i> | Communications |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Formulate ship's communication plan |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to formulate a ship's communication plan from OPTASK COMMS |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Allied Maritime Structured Messages</i>, APP 4, Vol. I; Ch. 1 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the format of the OPTASK COMMS and the information required to set up the ship's communication plan. |

Advancement Handbook for MN1

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| General MN <i>Skill Area</i> | Communications |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Maintain local CMS inventory |
| <i>Knowledge</i> you should have to perform this skill: | <p>How to:</p> <ul style="list-style-type: none"> • Maintain a local CMS account • Prepare CMS destruction documents • Obtain monthly CMS publications and fill out proper documentation |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Communications Security Material System (CMS) Policy and Procedures, CMS 1</i> |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect questions on the requirements for maintaining a CMS account, such as inventory, destruction, and use of CMS material. |

Part 4

Advancement Study Guide for MNC

Advancement Study Guide for MNC

| General MN <i>Skill Area</i> | Technical Administration |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Organize and supervise the maintenance of a technical library |
| <i>Knowledge</i> you should have to perform this skill: | How to organize and supervise the maintenance of a technical library |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none">• Appropriate technical manuals and instructions |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect various questions about a technical library. |

Advancement Study Guide for MNC

| General MN <i>Skill Area</i> | Technical Administration |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Monitor ship and ordnance alterations and prepare reports |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none">• How to monitor ship and ordnance alterations and prepare reports |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none">• Appropriate technical manuals and instructions |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect various questions about ship and ordnance alterations and reports. |

Advancement Study Guide for MNC

| General MN <i>Skill Area</i> | Technical Administration |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Prepare casualty reports |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none">• How to prepare casualty reports |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none">• Appropriate technical manuals and instructions |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect various questions about casualty reports. |

Advancement Study Guide for MNC

| General MN <i>Skill Area</i> | Technical Administration |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Prepare and update the CIC doctrine |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to prepare and update the CIC doctrine |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • Appropriate technical manuals and instructions |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect various questions about CIC doctrine. |

Advancement Study Guide for MNC

| General MN <i>Skill Area</i> | Technical Administration |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Monitor compliance with the emission control (EMCOM) plan |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none">• How to monitor compliance with the emission control (EMCOM) plan |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none">• Appropriate technical manuals and instructions |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect various questions about the emission control plan. |

Advancement Study Guide for MNC

| General MN <i>Skill Area</i> | Technical Administration |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Prepare, review, and submit the quarterly Personnel and Condition Report |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to prepare, review, and submit quarterly Personnel and Condition Report |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • <i>Quarterly Condition/Personnel Report, COMOMAG/MOMAGINST 3100.4</i> |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect various questions about the quarterly personnel and condition report. |

Advancement Study Guide for MNC

| General MN <i>Skill Area</i> | Technical Administration |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Prepare the quarterly workload schedule |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> How to prepare the quarterly workload schedule |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> <i>Service Mine Maintenance Workload Schedule</i>, COMOMAG/MOMAGINST 8550.4 |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect various questions about the quarterly workload schedule. |

Advancement Study Guide for MNC

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| General MN <i>Skill Area</i> | Mine Management and Supervision |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Coordinate the movement of explosives and inert material on and off station |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to coordinate the movement of explosives and inert material on and off station. |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • Appropriate technical manuals and instructions |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect various questions about the transportation of explosives and inert material on and off station. |

Advancement Study Guide for MNC

| General MN <i>Skill Area</i> | Mine Management and Supervision |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Prepare stowage plans (ordnance, inert material) |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none">• How to prepare stowage plans |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none">• Appropriate technical manuals and instructions |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect various questions about the stowage of ordnance and inert material. |

Advancement Study Guide for MNC

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| General MN <i>Skill Area</i> | Mine Management and Supervision |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Direct mine assembly operations |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to direct mine assembly operations |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • Appropriate technical manuals and instructions |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect various questions about mine assembly operations. |

Advancement Study Guide for MNC

| General MN <i>Skill Area</i> | Mine Management and Supervision |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Coordinate final preparation teams with the planting agent |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none">• How to coordinate final preparation teams with the planting team |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none">• Appropriate technical manuals and instructions |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect various questions about the final preparation of mines. |

Advancement Study Guide for MNC

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| General MN <i>Skill Area</i> | Mine Management and Supervision |
| A <i>skill</i> you are expected to perform from the General Skill Area above: | Supervise fantail operations during minesweeping evolutions |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to supervise fantail operations during minesweeping evolutions |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • Appropriate technical manuals and instructions |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect various questions about minesweeping. |

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| General MN <i>Skill Area</i> | Mine Management and Supervision |
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| A <i>skill</i> you are expected to perform from the General Skill Area above: | Instruct personnel in navigation, rules of the road, and boat handling |
| <i>Knowledge</i> you should have to perform this skill: | <ul style="list-style-type: none"> • How to instruct personnel in navigation, rules of the road, and boat handling |
| <i>References</i> you should study to gain the knowledge you need to perform this skill: | <ul style="list-style-type: none"> • Appropriate technical manuals and instructions |
| <i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly: | You can expect various questions about navigation and boat handling. |

Appendix 1

References Used in This Advancement Handbook

| Short Title | Long Title | Stocking Point |
|-------------------------|--|-----------------------|
| APP, Vol.4 | Allied Maritime Structured Messages, APP 4, Vol.1 | Note 1 |
| ATP 1, Vol.1 | Allied Maritime Tactical Instructions and Procedures, Allied Tactical Publication, ATP 1, Vol. 1 | Note 1 |
| ATP 1, Vol.2 | Allied Maritime Tactical Signal and Maneuvering Book, Allied Tactical Publication, ATP 1, Vol. 2 | Note 1 |
| OP 4 | Ammunition Afloat, NAVSEA OP 4 | Note 1 |
| OP 5 | Ammunition and Explosives Ashore Safety Regulations for Handling, Storing, Production, Renovation, and Shipping, NAVSEA OP 5, Vol. 1 | Note 1 |
| NAVEDTRA 12043 | Basic Military Requirements, NAVEDTRTA 12043 | Note 1 |
| NWP 6-01 | Basic Operational Communications Doctrine, NWP 6-01 | Notes 1&5 |
| NAVSEA 0910-LP-242-6900 | Bathymograph/Sound Velocimeter, AN/BOH-7A, Oceanographic Data Systems Surface Ship Applications, NAVSEA 0910-LP-242-6900 | Note 1 |
| NSTM S9086-TX-STM-010 | Boats and Small Craft, Naval Ships' Technical Manual S9086-TX-STM-010 | Note 1 |
| FM 23-65 | Browning Machine Gun, Caliber.50 HB, M2, Field Manual 23-65 | Note 13 |
| Catalog of Maps | Catalog of Maps, Charts, and related Products, National Imagery and Mapping Agency Hydrographic Products Part 2 Vol. 1 | Note 3 |
| CMS 1 | Communications Security Material System (CMS) Policy and Procedures, CMS 1 | Note 11 |
| SPCCINST 8010.12 | Conventional Ammunition Integrated Management System, SPCCINST 8010.12 | Note 7 |
| NAVSEA SW570-EO-MMO-070 | Destructor, Explosive, Mk 57 Mod 0, Operation and Maintenance Instructions, NAVSEA SW570-EO-MMO-070 | Note 1 |
| Dutton's | Dutton's Navigation and Piloting, 14 th Ed | Note 8 |
| NAVSEA OP 3565 | Electromagnetic Radiation Hazards, NAVSEA OP 3565 Vol. 2 | Note 1 |
| NWP 3-13.1.13 | Electronic Warfare Coordination, NWP 3-13.1.13 | Notes 1&5 |

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| COMOMAG 8550.13 | Guidance on Mine Bill of Materials (MBOM), Initial Outfitting Lists (IOL's) and Change Requests, COMOMAG/MOMAGINST 8550.13 | Note 4 |
| NAVSEA SW570-AA-OMP-020 | Handling System, Vehicle, Mine Locator Submersible, Operation and Maintenance with Parts List, NAVSEA SW570-AA-OMP-020 | Note 1 |
| NAVSEA SW023-AB-WHS-010 | Handling, Packaging, Storing, and Transportation of Underwater Mines and Destructors for Shore-Based/Shipboard Operations, NAVSEA SW023-AB-WHS-010 | Note 1 |
| DMA Pub. 102 | International Code of Signal, DMA Pub. 102 | Note 2 |
| JMCIS/NTCS-A-UG-001 Vol.I | JMCIS/NTCS-A Users Guide Vol. I, JMCIS/NTCS-A-UG-001 | Note 10 |
| JMCIS/NTCS-A-UG-001 Vol.II | JMCIS/NTCS-A Users Guide Vol. II, JMCIS/NTCS-A-UG-001 | Note 10 |
| NAVEDTRA 12968 | Lookout Training Handbook, NAVEDTRA 12968 | Note 1 |
| TM 9-1005-244-10 | Machine Gun, 7.62-MM, M60, Army Technical Manual 9-1005-224-10 | Note |
| TM 9-1005-224-24 | Machine Gun, 7.62-MM, M60, Army Technical Manual 9-1005-224-24 | Note 15 |
| NAVSEA S9522-AA-HBX-010 | Magazine Sprinkler Systems, NAVSEA S9522-AA-HBK-010 | Note 1 |
| Pub 217 | Maneuvering Board Manual, U.S. Department of Defense, Pub 217 | Note 2 |
| NWP 3-20.6.19 | MCM 1 Class Tactical Manual, NWP 3-20.6.19 (Rev.A) | Note 1&5 |
| CMWC C3516.1 | MHC 51 Combat System Doctrine, COMINEWARCOMINST C3516.1 | Note 12 |
| TO 11W3-6-2-1 | Military Shotgun, 12 Gauge, Pump Action, Model 870, TO 11W3-6-2-1 | Note 14 |
| NAVSEA SW550-AA-MMI-010 | Mine Components A through C, Description and Class-B Criteria, NAVSEA SW550-AA-MMI-010 | Note 1 |
| NAVSEA SW550-AA-MMI-020 | Mine Components D through F, Description and Class-B Criteria, NAVSEA SW550-AA-MMI-020 | Note 1 |
| NAVSEA SW550-AA-MMI-030 | Mine Components G through W, Description and Class-B Criteria, NAVSEA SW550-AA-MMI-030 | Note 1 |
| NWP 3-15.2 | Mine Countermeasures Operations, NWP 3-15.2 | Notes 1&5 |
| NWP 3-15.41 | Mine Countermeasures Planning and Procedures (General Instructions) NWP 3-15.41 (Rev.B) | Notes 1&5 |
| NAVSEA SW570-EO-MMO-080 | Mine Neutralization System Cable Cutter, Mk 26 Mod 0, Operation and Maintenance Instructions, NAVSEA SW570-EO-MMO-080 | Note 1 |

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| NAVSEA SW570-EO-MMO-090 | Mine Neutralization System Cable Cutter, Exercise, Mk 27 Mod 1, Operation and Maintenance Instructions, NAVSEA SW570-EO-MMO-090 | Note 1 |
| NAVSEA SW570-AA-OMI-010 | Mine Neutralization System, AN/SLQ-48(V), Operation and Maintenance Instructions, NAVSEA SW570-AA-OMI-010 | Note 1 |
| NAVSEA SW551-A3-MMI-010 | Mine, Underwater, Mark 65 Mods 0 and 1, Description and Procedures Intermediate Maintenance Activity, NASEA SW551-A3-MMI-010 | Note 1 |
| NAVSEA SE315-RO-MMO-010 | Minehunting Sonar Set, AN/SQQ-32(V)1, Volume 1, NAVSEA SE315-RO-MMO-010/SQQ-32(V)1 | Note 1 |
| NAVSEA SE315-RO-SOM-010 | Minehunting Sonar Set, AN/SQQ-32(V)1, Volume 2, NAVSEA SE315-RO-SOM-010/SQQ-32(V)1 | Note 1 |
| NAVSEA SE315-R1-MMO-010 | Minehunting Sonar Set, AN/SQQ-32(V)2, Volume 1, NAVSEA SE315-R1-MMO-010/SQQ2(V)2 | Note 1 |
| NAVSEA SE315-R1-SOM-010 | Minehunting Sonar Set, AN/SQQ-32(V)2, Volume 2, NAVSEA SE315-R1-SOM-010/SQQ-32(V)2 | Note 1 |
| NAVSEA SW550-AE-MMI-040 | Mines, Underwater: Actuation; Description, Assembly, and Tests, NAVSEA SW550-AE-MMI-040 | Note 1 |
| NAVSEA SW550-AE-MMI-010 | Mines, Underwater: Exercise and Training, Class-B Test and Refurbishment, NAVSEA SW550-AE-MMI-020 | Note 1 |
| NAVSEA SW550-AE-MMI-010 | Mines, Underwater: Exercise and Training, Description and Class-B Criteria, NAVSEA SW550-AE-MMI-010 | Note 1 |
| NAVSEA SW550-AE-MMI-060 | Mines, Underwater: Handling, Shop, Mechanical Sweep, and Hunting, Description and Assembly, NAVSEA SW550-AE-MMI-060 | Note 1 |
| NAVSEA SW550-AE-MMI-080 | Mines, Underwater: Laying, Description, Assembly, and Disassembly, NAVSEA SW550-AE-MMI-050 | Note 1 |
| NAVEDTRA 12453 | Mineman Volume 6, NAVEDTRA 12453 | Note 1 |
| NAVEDTRA 12454 | Mineman Volume 7. NAVEDTRA 12454 | Note 1 |
| JP 3-50 Vol. I&II | National Search and Rescue Manual Vol. I: National Search and Rescue System, Joint Chiefs of Staff, JP 3-50 National Search and Rescue Manual Vol. II: Planning Handbook, JP 3-05 | Note 6 |
| NAVSUP P-485 | Naval Supply Procedures, Volume I & II, NAVSUP P-485 | Note 1 |
| NSTM S9086-TW-STM-010 | Mooring and Towing, Naval Ships' Technical Manual NSTM S9086-TW-STM-010 | Note 1 |
| TM 9-1010-223-10 | Mortar, 60MM, M224, Army Technical Manual, TM 9-1010-223-10 | Note 15 |

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| NAVSEA OP 2239 | Motor Vehicle Driver's Handbook Ammunition, Explosives, and Related Hazardous Materials, NAVSEA OP 2239 | Note 1 |
| NAVSEA QAP 100 | Naval Ordnance Quality Assurance Procedures for Fleet Activities, NAVSEA QAP 100 | Note 1 |
| Chart 1 | Nautical Chart Symbols, Abbreviations and Terms, Chart 1 | Note 2 |
| COMDTINST M16672.2 | Navigation Rules, International-Inland, COMDTINST M16672.2 | Note 3 |
| NWP 1-03.1 | Operational Reports, NWP 1-03.1 | Notes 1&5 |
| TM 9-1005-211-12 | Pistol, Caliber .45, Automatic, M1911A1, Army Technical Manual, TM 9-1005-211-12 | Note 15 |
| NAVSEA SW370-AA-OPI-010 | Pistol, Semiautomatic, 9mm, M9, Navy SW370-AA-OPI-010/9MM | Note 1 |
| OPNAVINST 3100.7 | Preparing, Maintaining, and Submitting the Ship's Deck Log, OPNAVINST 3100.7 | Note 9 |
| NAVSEA SW050-AB-MMA-010 | Pyrotechnic Screening, Marking, and Countermeasures Devices, NAVSEA SW050-AB-MMA-010 | Note 1 |
| COMOMAG 4855.1 | Quality Assurance (QA) Procedures, COMOMAG/MOMAGINST 4855.1 | Note 4 |
| TM 9-1005-233-10 | Rifle, 7.62-MM, M14, Army Technical Manual, TM 9-1005-223-10 | Note 15 |
| TM 9-1005-223-20 | Rifle, 7.62-MM, M14, Army Technical Manual, TM 9-1005-223-20 | Note 15 |
| ATP-10 | Search and Rescue, Allied Tactical Publication, ATP-10 | Note 1 |
| COMOMAG 8550.4 | Service Mine Maintenance Workload Schedule, COMOMAG/MOMAGINST 8550.4 | Note 4 |
| OPNAV 3100 | Ship Operational Data Forms, OPNAV 3100-3360 series, (OPNAV Form 3100/2, 3100/3, 3100/5) | Note 9 |
| NAVSEA 0967-LP-490-1640 | Sonar Communication Set AN/WQC-2A, Operation Instructions, NAVSEA 0967-LP-490-1640 | Note 1 |
| OPNAVINST 8550.12 | Standard Organization and Regulations of the U.S. Navy, OPNAVINST 3120.32 | Note |
| COMOMAG 8550.12 | Standard Production and Processing Procedures for Mines, COMOMAG/MOMAGINST 8550.12 | Note 4 |
| COMOMAG 4000.1 | Supply Procedures, COMOMAGINST 4000.1 | Note 4 |
| NAVSEA SW570-FO-MMO-030 | Surface Mine Countermeasures, MCM Class Ship, Rigging, Streaming, and Recovery, NAVSEA SW570-FO-MMO-030 | Note 1 |

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| NAVSEA SW570-FO-MMO-040 | Surface Mine Countermeasures, MCM Class Ships, Operations and Maintenance, NAVSEA SW570-FO-MMO-040 | Note 1 |
| NWP 3-15.21 | Surface Mine Countermeasures Operations, NWP 3-15.21 (Rev.B) | Notes 1&5 |
| Pub NO. 9 | The American Practical Navigator: Bowditch, Pub No. 9 | Note 2 |
| NAVSEA SW550-FO-PMS-010 | Underwater Mine Maintenance System, NAVSEA SW550-FO-PMS-010 | Note 1 |
| NAVSEA SW570-FO-MMO-050 | Versatile Exercise Mine System (VEMS), Description and Maintenance, Rigging, Deployment, and Recovery, NAVSEA SW570-FO-MMO-050 | Note 1 |
| NAVSEA SW550-AE-MMI-070 | Versatile Exercise Mine System (VEMS), Description and Maintenance, NAVSEA SW550-AE-MMI-070 | Note 1 |
| NSTM S9086-UU-STM-010 | Wire and Fiber Rope and Rigging, NSTM S9086-UU-STM-010 | Note 1 |
| TM 9-1010-205-10 | 40-MM Grenade Launcher M79, Army Technical Manual, TM 9-1010-205-10 | Note 15 |
| TM 9-1010-205-24 | 40-MM Grenade Launcher M79, Army Technical Manual, TM 9-1010-205-24 | Note 15 |

LEGEND:

Note 1– To order, --MILSTRIP to NAVICP PHILA or via INTERNET
<http://www.nll.navsup.navy.mil>

Note 2– National Imagery & mapping Agency (NIMA), CATP1V01
Customer Help Desk: 1-800-455-0899
DSN: 490-1236
Coml: (314) 260-1236

Note 3– National Imagery & mapping Agency (NIMA), CAT2V01U
Customer Help Desk: 1-800-455-0899
DSN: 490-1236
Coml: (314) 260-1236

Note 4– Ltr request to: Commander Mobile Mine Assembly Group
275 Fifth St SE
Corpus Christi TX 78419-5008

Note 5– NTIC Series B1 (CD-ROM) (See your command NWP Custodian)

Note 6– INTERNET <http://www.dtic.mil/doctrine/jel/index.html>

Note 7– Ltr request to: Commanding Officer
Navy Ships Parts Control Center
5450 Carlisle Pike
P.O. Box 2020
Mechanicsburg PA 17055-0788

Note 8– Commercial purchase

Note 9--INTERNET <http://neds.nebt.daps.mil/>

Note 10– Ltr request to: Space and Naval Warfare Systems Command
Information Management Systems Program
(PD 60)
Washington DC 20363-5100

Note 11– Ltr request to: Commanding Officer
Communications Security Material System
3801 Nebraska Ave N. W.
Washington DC 20393-5252

Note 12– Ltr request to: Commander Mine Warfare Command
325 Fifth St. SE
Corpus Christi TX 78419-5032

Note 13– INTERNET <http://155.217.58.58>

Note 14– Request from: WR-ALC/TILTB
Robins AFB, GA
POC---DSN 468-2119

Note 15– Request from: U.S. Army Publications Distribution
Center-St. Louis, MO
DSN 693-7305 Ext. 266 or 268